

MAKLI NECROPOLIS (14th – 18th Century) INVESTIGATION INTO GEOMETRY OF FORM AND ORNAMENTATION

ABSTRACT:

The use of conscious or unconscious geometry¹ is as old as the first architectural abode. The first use of it was though written in history during Egyptian, Mesopotamian and Harappan times around some 3500 BCE as this was the time when writing appeared first. There was practical use of mathematics in daily life like measuring fields, marking plots of spaces, in planning cities, and in architecture. The best possible expression and use of geometry was found in their *religious buildings* and architecture of symbolic and ritual importance. There is no separating geometry from architectural design. Geometry in traditional religion was/is both qualitative and quantitative. It is this qualitative attribute that provided meaning in the use of certain geometric shapes and forms in design. In Islamic art and architecture design transcends the realm of utility and provision and enters the domain where forms/shapes have symbolic meaning and importance. Without the understanding of theory behind the meaning, comprehending Islamic art and architecture becomes complex. This is briefly discussed in the paper

The main objective of the research is to focus on geometric patterns that are used for surface articulation in the tombs of Makli Necropolis. Makli is one of the largest necropolises in the world; it is believed to be the burial ground of some 125,000 Sufi saints and is on the list of UNESCO world heritage site. It is essentially a cemetery having a tradition of approximately 400 years of magnificent tomb construction. The site can easily be declared a repository of stone carved patterns ranging from very Hindu symbolic patterns in the earlier times evolving into very arabesque style patterns with the coming of Central Asian rulers and eventually Moghals. The city of Thatta was the capital of the rulers who had their final resting places built on this ridge overlooking the city towards its east.

The paper is broadly divided in two parts. The first part introduces the site and evaluates the form and available plans of the tombs both symbolically and geometrically. This part will discuss the theory of geometry in Islamic art and architecture, meaning into forms and relating it to the use of forms on the site. The second part introduces the stone carving tradition of Makli hill, building the narrative for the stone carved geometric patterns on the tombs.

1. By conscious or unconscious the author means weather the older civilizations were aware of the science of geometry or they were unaware of it as a science and having symbolic meaning.

INTRODUCTION:

The site of Makli is located near the town Thatta the capital of lower Sindh until 1789. Thatta is located some 55 miles east from Karachi the capital of present day Sindh province of Pakistan. Makli is essentially a cemetery revered to date by the people of Sindh as a sacred site where 125000 (an approximate figure) saints and nobles are buried. It is one of the largest necropolises in the world and is listed in UNESCO world heritage sites. Makli rose to importance as a burial site during the Samma rule (1351/52- 1524).

THE CITY OF THATTA:

For a larger period of time the history of Sindh was synonymous to the history of Thatta, as it was the capital of the Samma rulers (1352 – 1524) and a flourishing trade center. The earliest mention of name Thatta was in 13th century when it was mentioned in the verse by Amir Khusrao (1253-1325) the court poet of Delhi Sultanate.

He writes:

*“A cypress like you is not in Uch or Thatta;
A rose like your pretty face is certainly not existent”* [Schimmel, 1983: 6]

For 4 centuries Thatta was one of the seats of Islamic learning, fine arts and handicrafts, as well as a flourishing port of continental trade in the East. Its commercial intellectual and cultural greatness attracted travelers, traders, and scholars from different countries of Asia and Europe. To traders and travelers from west Thatta was practically synonymous to Sindh. In 1607, the East India Company instructed its agent to sail ‘to Laurie (Larri Bandar) – a good harbor within two miles of *Nagor* Tuttie (Nagar Thatta) – as great and as big as London’. In 1613, Captain Paynton describes Thatta as one of the most celebrated markets of India. Alexander Hamilton in 1699 mentions Thatta as densely populated and a very rich city about 3 miles long and one and a half mile broad; there are 400 educational institutions where students from all over Asia learnt philosophy, politics, and different branches of speculative sciences in addition to theology [Siddiqi 1970: 2]. The city is popularly known as ‘*Nagar* Thatta’ where *Nagar* means town, and Thatta points towards close proximity of town from river. The decline of this cultural center of Sind started around 1739 when Nadir Shah (1736-1747) took power of Delhi and the province came under his rule. He made Mian Nur Mohammad Kalhora, the religio-political ruler of the clan of Kalhoras, administrator of Sindh. He ruled Sindh from Khudabad and not Thatta. Henry Pottinger in 1809 found the city to be uninhabited with population reduced from 2 lacs to 20000 [Siddiqi 1970: 3].



Fig 01: Map showing city of Thatta in present day Pakistan. (Google Maps)



Fig 02: Map showing city of Thatta and site of Makli Necropolis. (Google Maps)

IMPORTANT RULING DYNASTIES OF THATTA:

The chief ruling dynasties and proto dynasties for four centuries when Thatta was capital of Sindh were:

1. Sammas (1351/52-1524).
2. Arghuns (1524-1555).
3. Tarkhans (1555- 1592).
4. Mughals in Lower Sindh (Thatta, 1592-1739)

THE SAMMAS: (1351/52-1524):

Many scholars maintain Sammas to be native people of the region of Sindh, belonging to Rajput clan and later converts of Islam. They were land owners in Sindh and had relations with the rulers in Kutch and Gujarat in present day India. During 1351/52 taking advantage of the estranged relations of Delhi Sultanate (Tughluq Dynasty 1320-1414) and the local Soomra chiefs (ruling dynasty pre-Samma for approximately 350 years) established their rule in the lower Sindh basing their capital at Samui North of Makli Hill. Jam Unar son of Bhambhina-I was the founder of Samma Dynasty. The later Jams ('Jam' is the title used by Samma rulers) were sons of Jam Unar and Jam Juna (brother of Jam Unar). Samma dynasty like any other has been tainted with blood feuds and power struggle between the families of Jam Unar and Jam Juna. They ruled Sindh for almost 150 years independent from the pressure of Delhi. The reign of Jam Nizam al-Din II (1461-1508) was the most prosperous and he has been called Harun-ul-Rashid of Sindh [Lari 1997: 12]. During his reign the capital was shifted from Samui to Thatta possibly due to shifting of the course of river Indus. His son Jam Feroz (1508-1524) was last of the Samma ruler where his incapability and power feuds led to the fall of Samma Dynasty and Qandahar based Arghuns, who were called for help by Jam Feroz against his cousin Jam Salah-al-din of Juna family, over threw him and established their rule in Lower Sindh.

THE ARGHUNS (1524-1555):

Arghun and Tarkhan rulers were from Central Asian region belonging to the Turkic tribes and were sons of Arghun Khan tracing lineage to Genghis (Chingiz) Khan. After the Safavids (1501-1736) domination in most parts of Persia, members of Timurid dynasty, prince, dependants and nobles etc. established their rules in eastern parts of Asia as is the case with Babur (1526-1530) the Mughal ruler establishing himself in India. The Arghuns wanted to secure a region for themselves amidst all the tension both internal and external. Shah Shuja Beg Arghun advanced in Sindh during the rule of Jam Nizam-al-Din around 1490 AD but was defeated and Sultan Muhammad Beg brother of Shah Shuja Beg was killed. During the rule of Jam Feroz, Arghuns again advanced towards Thatta and in 1520 defeated the Samma army but handed back Thatta to Jam Feroz. Finally in 1524 after the death of Shah Shuja Beg his son Shah Hasan established his

rule in Thatta and the Samma rule ended. After the death of Arghun ruler Shah Hassan in 1555 their cousin dynasty of Tarkhans established themselves as rulers of Thatta and Sindh.

TARKHANS (1555-1592):

The rulers of Tarkhan dynasty have been mostly written as oppressive. Mirza Isa Tarkhan I (1554-1565) and later his sons ruled over Thatta. Mirza Jani Beg (1593) and Mirza Ghazi Beg (1614) ruled as governors of Mughal Emperor Akbar (1556-1605) and Jahangir (1605-1627).

THE MUGHALS IN SIND (1592-1739):

From 1592 to 1737/39 appointed Mughal governors ruled over Thatta. After the last Mughal governor of Thatta handed the power to Mian Nur Mohammad Kalhora, Thatta lost its political ascendancy and Makli its architectural and spiritual hegemony in Sindh. The glory of those 400 prosperous years of supremacy of Thatta over lower Sindh is visible not in the city of today but the nearby cemetery of Makli. The remains at Makli of tombs, enclosures, stone-carved and brick-clad edifices and graves speak volumes about the city that once was.

MAKLI HILL:

Many anecdotes are attached as to how the site got the name “Makli”. Some associate it with the traveler going for a holy pilgrimage to Mecca stopping at the site and when seeing the *Jamia masjid*² and surroundings exclaimed “*Hadah Makkah li*” (this is Mecca for me) and kept on repeating in state of ecstasy. Shaikh Hammad Jamali the saint, (revered by Samma ruler Jam Tamachi to whom is attributed the founding of the site of Makli) named the *masjid* as Makli *masjid* after the happening. Another story narrates of a pious lady by the name of *Mai*³ Makli who is buried abutting the wall of the Jamia Masjid on Makli hill near the Samma cluster [Dani 1982: 5].

MONUMENTS ON MAKLI HILL:

The site is essentially a cemetery consisting of tombs as mentioned earlier. The monuments belong to the rulers, nobles, governors and families of the ruling dynasties mentioned above. The construction of these funerary structures continued for 400 years when Thatta as a capital city reigned supreme. The monuments can be divided into categories by building type and material of construction. The main building types are:

1. **Tombs**, mostly square chambers with graves inside and a dome on top built both in stone masonry and bricks with or without tile decoration.

2. *Jamia Masjid* means Friday mosque. Samma period mosque is the only one on Makli necropolis site.

3. *Mai*’ is a Sindhi language word meaning lady or woman mostly used for older women

GEOMETRY AND ISLAMIC ARCHITECTURE:

In Islamic art the expression is of unity and diversity, the one and the whole. The basic shapes like circle, triangle and square are used in ways to assert this notion as the core concept in design. The circle symbolizes the cosmos and the square symbolizes the earth. These shapes are nothing but expressions in the form of geometry. Geometry proceed through one single point to a line containing two points to a triangle that is union of three points so on and so forth. One is the creator, 2 is the intellect, 3 is soul, 4 is matter or earth, 5 is nature, 6 is body, 7 is universe, 8 is qualities, 9 beings of the world, 12 is the zodiac, 28 is the number of stations of moon so on and so forth [Ardalan, Bakhtiar 1973: 26]. This gives us a series of number and proportions that can be applied to architecture and contain symbolic meaning. These numbers are found in nature as well like in snow flakes, horns of animals, flowers, butterflies, and water currents etc. Fibonacci explained these number series present in nature in the 12th century. The triangle, square and a circle are not merely shapes they incorporate a reality, understanding of which leads man to Truth. The ideal or sacred geometry is the term used frequently to explain these relationships of numbers and proportions, expressed through shapes, found in nature. Geometry played a significant role in design of Islamic architecture. The fundamentals of architecture belonged to mathematical sciences and the basic science of architecture was the knowledge of *hiyal*. The term means skill art cunning and concerns the ingenious and artistic manipulation of geometric forms. Geometry was the foundation of an architect's training and highly skilled architect was called *muhandis* a geometer [Golombek, Wilber 1988: 137]. The Islamic system of proportions is based on geometric properties of square the double square the equilateral triangle and the pentagon. They were employed in the use of designing elements like arches, domes, *muqarnas*, and most important was their application in the design of geometric patterns surface.

The use of geometric grids for the development of ornamentation of facades and interior wall surfaces was based on: [Golombek, Wilber 1988: 140-141]

- Grid of squares.
- Square and its derivatives.
- Semi square and its derivatives or Double Square.
- Equilateral triangles and its derivatives.
- Combination of squares and equilateral triangles.
- Girih. (Girih design consists of five different shapes which can be combined to create the intricate patterns found decorating Islamic architecture).

The geometric patterns emphasized centrality that highlighted unity or oneness and it expanded and grew from the center suggesting diversity. These patterns de-materialized the walls and surfaces they were applied on. For a Muslim artist, geometric interlacement and decorative patters (*arabesque*) represent the most intellectually satisfying form for it is an extremely direct expression of the idea of the Divine Unity underlying the inexhaustible variety of the world. True, Divine Unity is beyond expression because its true nature in total with in itself and nothing is outside it, it is without a second. But is through harmony reflected in the world it is reflected. Harmony is nothing but unity in multiplicity,

as multiplicity in unity, and interlacement pattern express these ideas [Burckhardt 1976]. The endlessness/continuity of the design emanating from a single center expresses this notion of unity and multiplicity and vice versa.

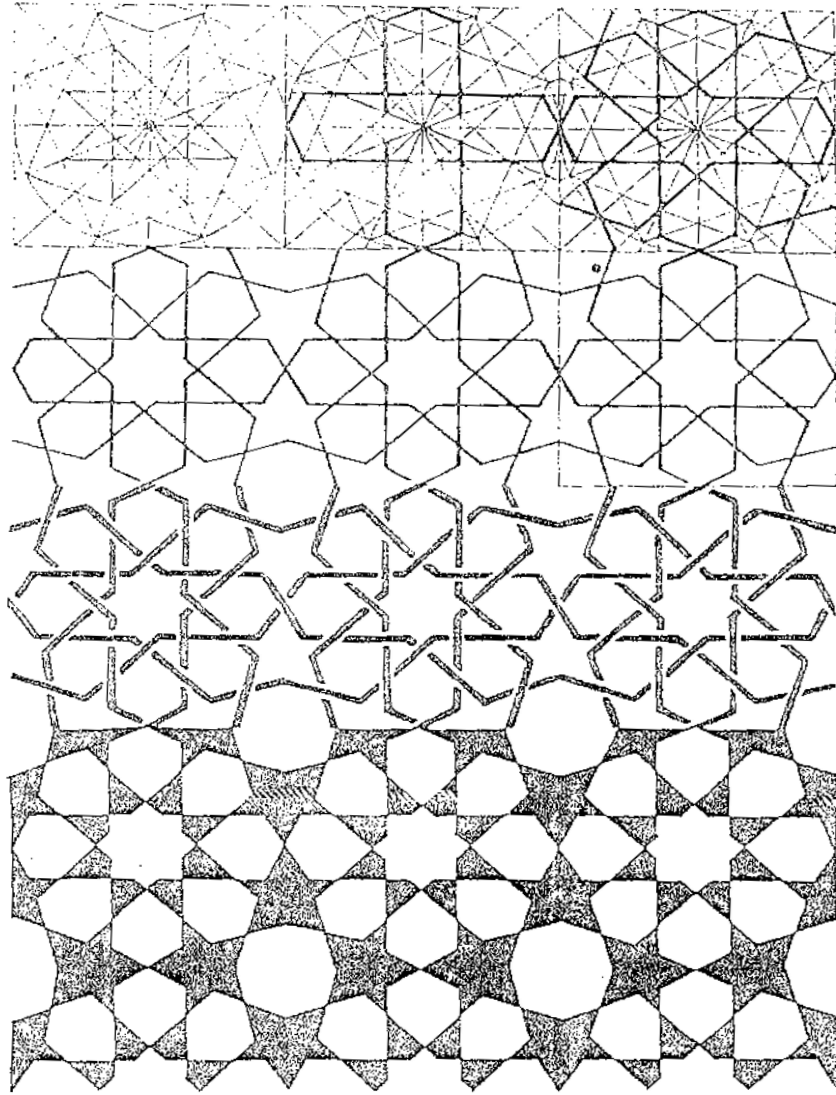


Fig 05: Example of geometric pattern generated from repetition of eight pointed star. [Wilson 1997]

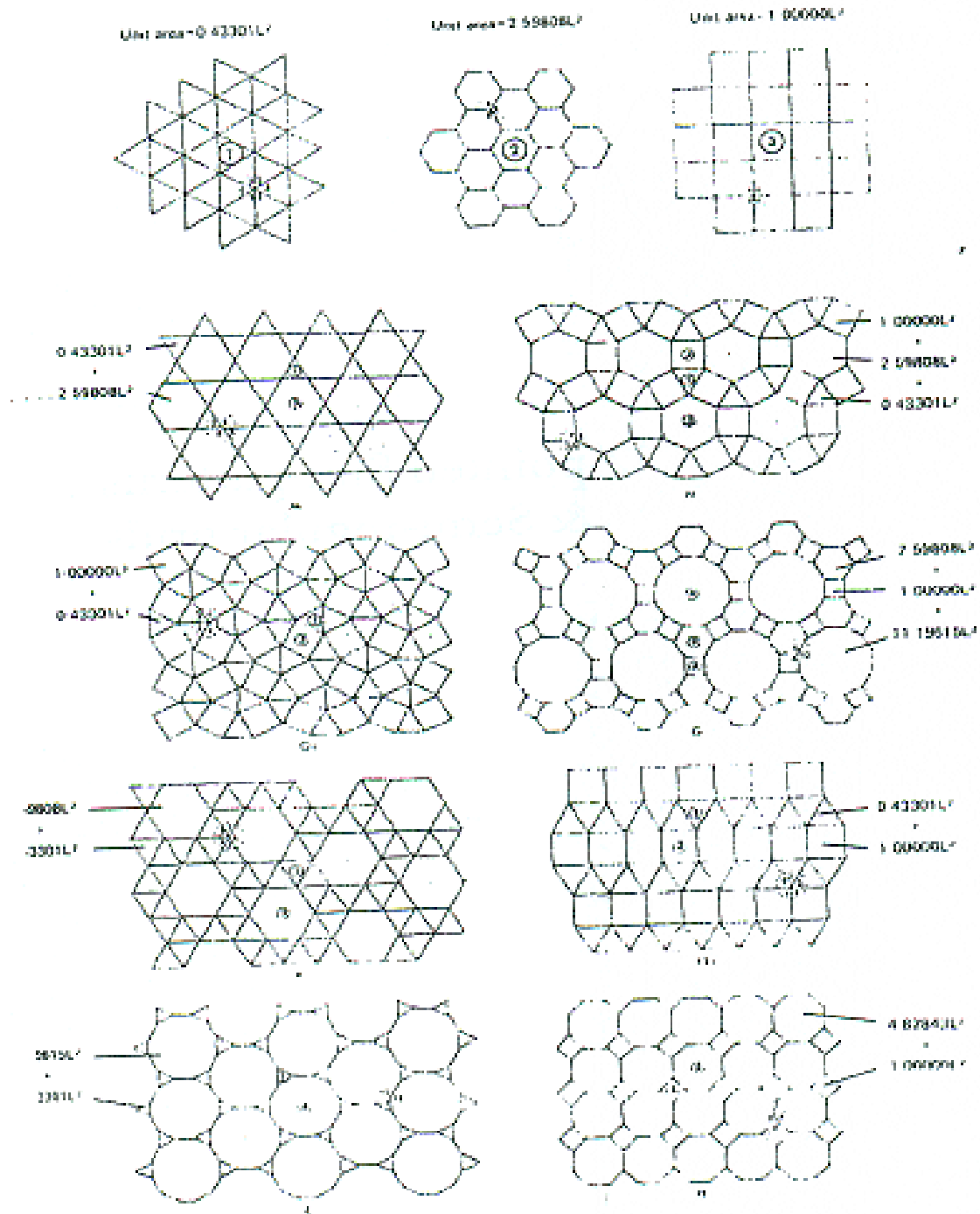


Fig 06: Example of geometric pattern generated from use of triangular, square and hexagonal grid. [Critchlow 1989]

CASE OF TWO TOMBS ON MAKLI NECROPOLIS:

The tradition of building funerary structures on Makli necropolis continued in all four major dynasties that ruled Thatta. The major types of funerary structures that are discussed earlier were constructed either of brick or stone masonry. For the paper case of two most celebrated tombs on the site will be discussed, outlining comparison and geometric similarities in form and surface decoration. Tomb of Jam Nizam al Din completed in 1509 CE and Tomb of Mirza Isa Khan Tarkhan II, construction on which started circa 1628 and it took 18 years to complete [Dani 1982: 141]. These belong to Samma and Mughul dynasties in Sindh respectively, constructed almost 120 years apart. Both the tombs were conceived as domed square chambers where the dome for Jam Nizam al-Din's tomb could not be built due to, either lack of expertise or the tense political situation of the region. Whatever maybe the case for the paper both the tombs will be considered as domed square chambers.

SYMBOLISM IN GEOMETRY OF DOMED SQUARE FORM:

The site of Makli like many necropolises in the world is a venerated site and is considered sacred. Like acropolis of Athens, Makli is on a higher ground where it sits as a back drop for the city of Thatta (of yore and present). The founding of *Khanqah* (hermitage) of Hammad Jamali (venerated saint) on the site provided the central point around/ near which the tombs, graves and canopies were built earlier. These funerary monuments did not remain confined to the earlier location but spread southward concentrating mostly on the eastern side (refer Fig 09). In the essence not just the site but the built structures were also sacred in their inherent nature as they carried the remains of the deceased in the final abode. The geometry of form of structure also plays a role in dissemination of the symbolism attached to the structure. The tomb of Jam Nizam al Din and Isa Tarkhan-II are archetypical domed square chambers. The domed square signifies an earthly square chamber transforming into an octagon representing the world of non physical or psychic into a circular dome representing the spiritual or heavenly realm. Hence the square signifies the physical world, the polygon signifies the intermediary world between the heavens and the physical world and the circular dome signifying the heavens or the spiritual world. Sayyed Hossein Nasr in the foreword of "Sense of Unity" writes, "The Square of the *Ka'bah* repeated in the classical courtyards and buildings, is not *just* a square. It is also the symbol of stability and completion and reflection of the quadrangular temple of paradise of which the *Ka'bah* itself is the earthly image. The octagonal form of so many mosques is not *just* an architectural device to enable the architect to place the dome upon a square base, but a reflection of the Divine Throne (*'arsh*), which according to Islamic traditions is supported by eight angels. The dome is *just* not a way to cover the walls. It is the image of the vault of heaven and beyond it of the infinite and illimitable world of the Spirit of which the sphere or circle is the most direct symbol [Ardalan, Bakhtiar 1973: foreword xi-xiv]. The geometric shapes like circle square and octagon therefore have, not just quantitative but a qualitative and symbolic meaning.



Fig 07: Tomb of Jam Nizam al-Din, Samma Period, Makli Necropolis, Thatta



Fig 08: Tomb of Isa Khan Tarkhan II, Mughal Period, Makli Necropolis, Thatta.

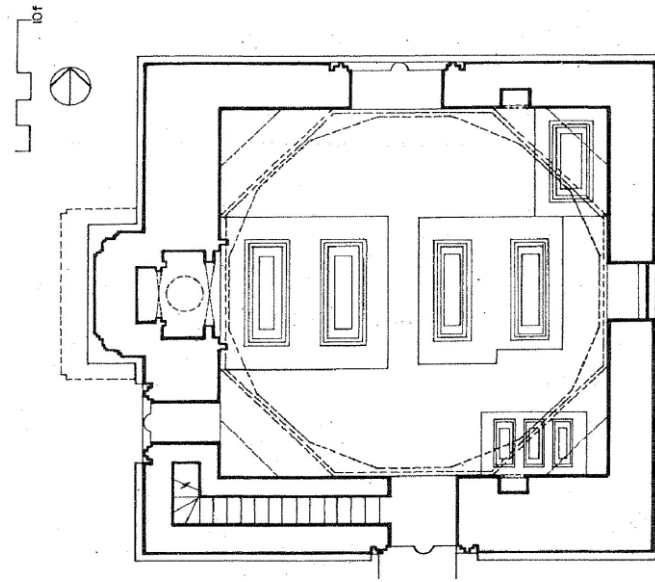


Fig 10: Plan of Tomb Jam Nizam al-Din dotted lines indicate the transformation of plan into an octagon and hexadecagon to support the dome [Lari 1997: 146]

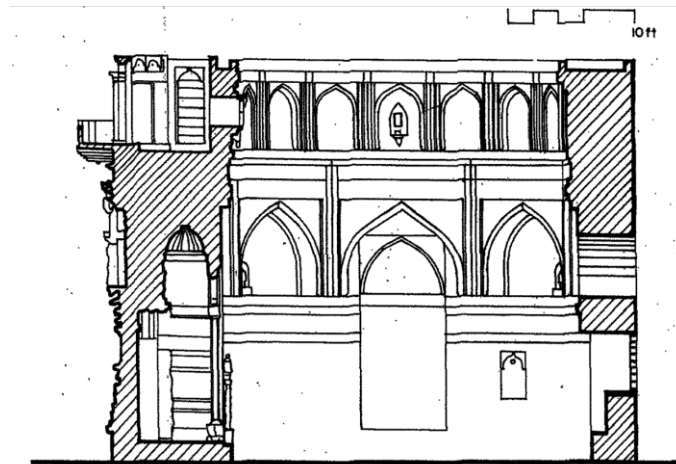


Fig 11: Section of Tomb Jam Nizam al-Din indicating conversion of chamber into octagon and hexadecagon to support the dome (never built) [Lari 1997: 147]

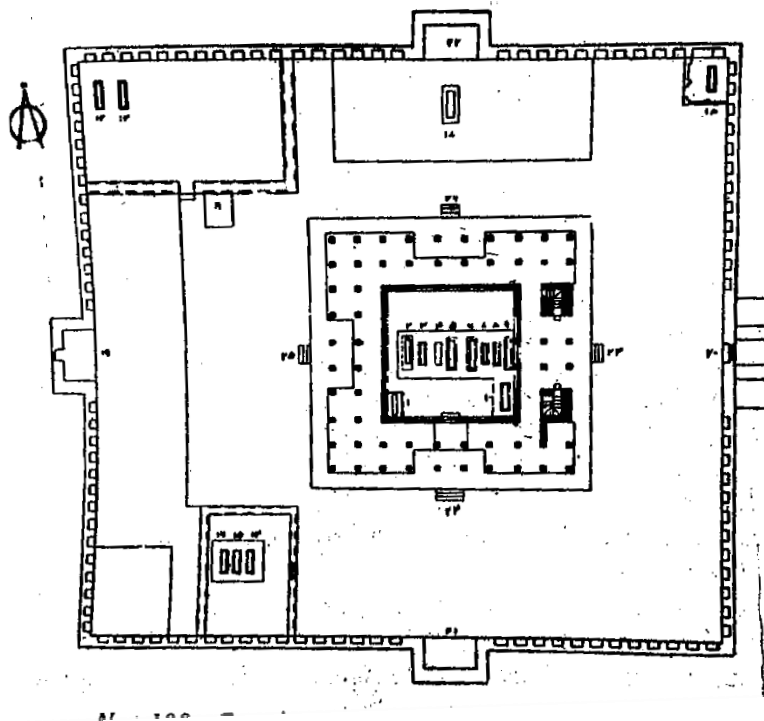


Fig 12: Plan of enclosure of Isa Khan Tarkhan II, showing the tomb in the center with a 4 Iwan plan type for enclosure. [Dani 1982: 141]

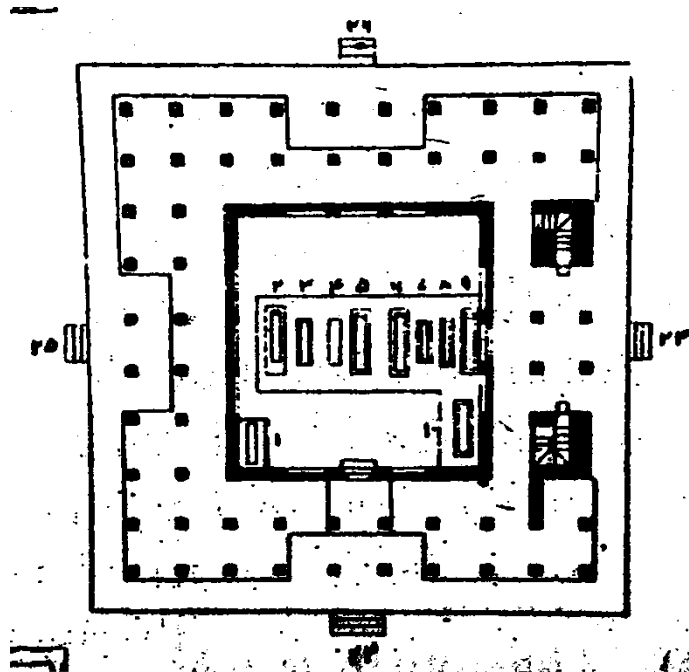


Fig 13: Plan of tomb of Isa Khan Tarkhan II, central domed square chamber surrounded by a double colonnade having galleries. [Dani 1982: 141]

The forms therefore being three dimensional manifestations of shape reflect this meaning in architecture. The Square or a cube is the most arrested and inactive shapes. The cube is therefore regarded as the symbol of the earth in the macro-scale the circle or sphere, which is the most perfect shape, symbolizing the lightness and total mobility of Spirit [Ardalan, Bakhtiar 1973: 29]. The terms “cosmic tent”, “majestic parasol”, “cosmic egg” and “heavenly bowl” convey the esoteric meanings associated with dome. Within Islamic culture, the dome (*gunbad*) maintains its ancient imagery while prong a vivid manifestation of fundamental Islamic cosmogony. By means of symbolic transfer, the Islamic attributes of center, circle and sphere are inherent in the dome are fully realized [Ardalan, Bakhtiar 1973: 74].

Dome is absent⁴ in the case of Jam Nizam al Din’s tomb as it was never built; nevertheless the monument was conceived as having a dome therefore the symbolism applies. The dome on Isa Tarkhan’s tomb was constructed and is extant to date. The domed square chambers are closely related to fire temples (*chahar-taq*) of the Sassanian period [Daneshvari 1986: 18] and can be coined as direct derivatives of the form. In its form, it embodies the most basic resolution of the square and the circle. The cubical volume of the base, viewed as man, earth. Or the earthly paradise is the supreme symbol of immobility and the most externalized manifestation of the Creator – In short, it presents to the imagination those basic and apparently the most stable aspects of temporal life. Super imposed upon this space is the circular or spherical dome, representing the world of pure quality. Symbolizing the lightness and total mobility of the Spirit, it is a form that has no beginning and no end. Its sole point of reference is its center, through which develops the metaphysical axis that links it with the axis of the square resting below it. This Vertical Cause unites the two forms qualitatively and the transformation of the circle into the square represents a quantitative unification – Here, then within the primordial forms of the circle and the square traditional man finds his spatial locus. The *chahar taq* shelters his place of spiritual birth life and death [Ardalan, Bakhtiar 1973: 75]. The figure below is taken from a lecture given by Architect Taimoor Khan Mumtaz for a workshop on “*In Search for Timeless in Islamic Architecture*” in Feb 2010 at Department of Architecture, NEDUET Karachi. The figure demonstrates the symbolic meaning explained above, regarding geometry of form/shape and the inherent meaning associated with their use in built structures. Looking at the picture below and the explanation given the illustration does make sense regarding the meaning into the use of shapes and forms. The geometry of domed square form according to my understanding can therefore be interpreted as the representation the physical world or the earth conceived as a square base the intermediary realm conceived as an octagon and hexadecagon and the dome on top representing the heavenly realm beyond the physical.

4. Refer, Dani, Ahmad Hasan. 1982. *Thatta Islamic Architecture*. Islamabad. Institute of Islamic History Culture and Civilization or
Lari, Yasmeen, Suhail Zaheer Lari. 1997. *The Jewel of Sind: Samma Monuments on Makli Hill*. Karachi. Oxford University Press.

The Square

The Octagon
&
The Circle

are
Symbols
of the
three worlds

Spiritual
Psychic
Physical

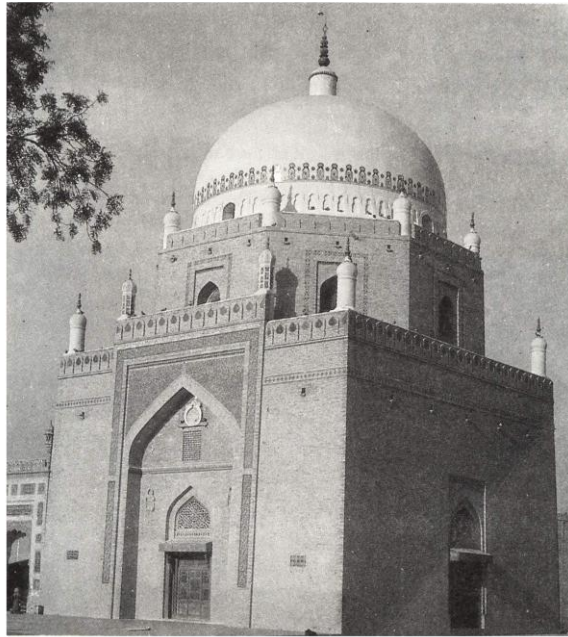


Fig 14: Slide showing archetypical domed square tomb and meaning associated to the forms (TKM Feb 2010 Lecture @NEDUET Karachi)

The tomb itself becomes a marker for the journey of the soul of the deceased from the earthly bounds to the heavenly realm. The axis (explained above) hence generated by the use of these forms signify this travel. There is no documentation proof that the builders were aware of this underlying symbolism of form. Adoption of the domed square pavilion as archetypical tomb type around the Islamic lands compel one to look into the meaning of the geometry of form and shape that can be a reason for their extensive use. For Abbas Daneshvari, the *chahar-taq* form symbolizes fourth level of Paradise sought in the life hereafter by the deceased and hence is the most fitting form for the tombs⁵.

5. Refer pg (17-25) Daneshvari, Abbas. *Medieval Tomb Towers of Iran: An Iconographic study*. Mazda Publication, 1986.

SURFACE DECORATION ON THE TOMBS:

The Tomb of Jam Nizam al Din has other symbolic features used as the decorative and ornamental motifs on the façade and in the interior of the chamber. Some of these motifs used in form of exterior linear bands of decoration will be discussed. These patterns are not inherently 'Islamic' in nature as is the case with the form. The decoration borrowed from the indigenous regional Hindu/Buddhist traditions. Some of the motifs have underlying transcendental meaning associated with them. The use of those motifs in the design of the tomb may have a symbolic meaning. The lotus flower (called *padma* in Hindi) pattern used in the third and fourth decorative bands (fig 15) is a symbol of creation. In Hindu mythology, the lotus is indicative of presence of goddess Lakshmi and considered a symbol of sun, representing the womb of universe which gave birth to all creations [Lari 1997: 159] lotus is also the national flower of India.

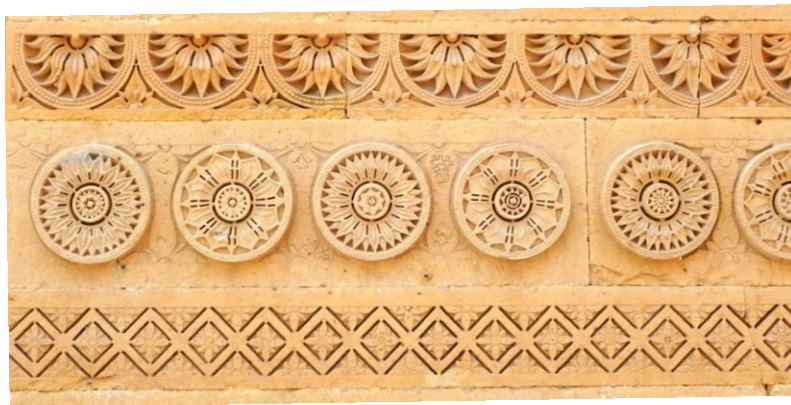


Fig 15: Second, third and fourth decorative bands, Tomb of Jam Nizam

There is a peculiar goose motif used in the tenth band of the tomb (fig 16). This is first instance of use of animal imagery on a Samma Monument. The geese/gander is called *Hamsa* in Hindi/Sanskrit. In Hindu mythology the gander is equated with the sacred *hamsa* and is frequently found in Hindu temples where god Brahma is shown soaring on his charger – a magnificent gander. The gander is a migratory water bird, which flees from Central Asia to almost all parts of the Sub-Continent during winter months. Thus, Hindu *yogi* once free from the bondage of rebirth is said to attain the rank of the *hamsa*. It has been suggested that in the case of *Maqbara* of Jam Nizam al-Din, gander symbolizes the flight of the soul to heaven [Lari 1997: 186]. The mention of birds of paradise is prevalent in the Muslim theological discourses as well. The geese/gander band is not carved on the all the four walls of the tomb it is on the west and north wall. A tree motif is carved instead of the gander on the south and east walls (fig 17). The question can be asked here that the tree, does it symbolize the tree of life or paradise which is discussed widely in the Muslim discourses on theology and perennial philosophy. It cannot be stated with certainty that the intent was replacement of a symbolic motif by another symbolic motif, were the artisans aware of the prevailing symbolism of the 'tree'. There is no literary proof of that; the point nevertheless has potential for future research and discussion.



Fig 16: Tenth decorative band of geese, Tomb of Jam Nizam.



Fig 17: Tenth decorative band change from geese detail to the tree motif,

At the entrance threshold of tomb there is a ‘moonstone’ shaped like a circular step (fig 18). The moonstone is found in the Hindu-Buddhist temples and signifies the cycles of birth, death and *bardo*⁶. Threshold signifies a point of departure from one state to another like an entrance to the mosque can signify entrance from profane to the sacred. Hence the requirement to perform ablution reflects an act of cleansing and purifying. Here according to my understanding the moonstone may signify one of the cycles of life, death and *bardo* the departure of the soul to the realm of death beyond the world of the living.



Fig 18: Moonstone detail from the western entrance, Tomb of Jam Nizam al Din.

6. *Bardo* means the state of soul between death and rebirth (www.wikipedia.org).

Tomb of Isa Khan Tarkhan –II like Jam Nizam’s tomb is highly decorated with stone carved motifs adorning the façade and interior. The difference here is that ornamentation is arabesque and uses ‘Islamic’ geometric interlacement patterns rather the Gujarat and Kutch adopted figural and floral motives we see in Jam Nizam’s tomb. The monument borrows from a repository of six; eight and ten (etc.) pointed star patterns that reflect convergence and divergence towards and from the center signifying unity and diversity. Many of these patterns have been discussed in Critchlow’s book in detail with underlying meaning into the geometry. All this patterns are inherently center oriented and have parent circle inscribed with in.

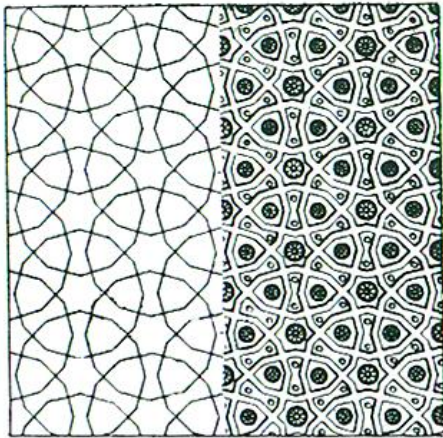


Fig 19: [Siddiqi 1970: 15]

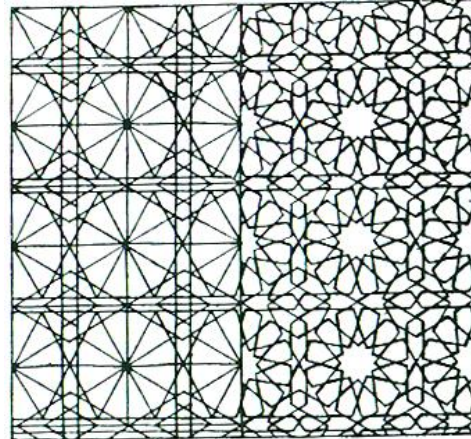


Fig 20: [Siddiqi 1970: 15]

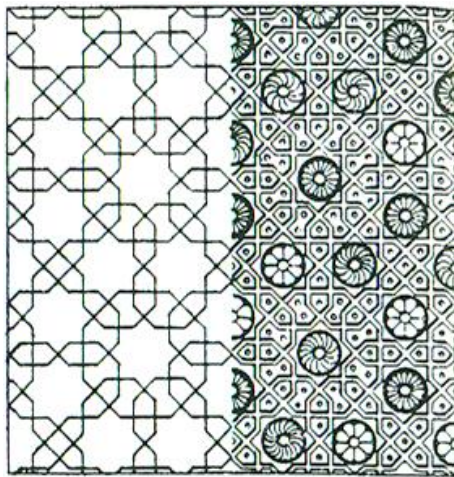


Fig 21: [Siddiqi 1970: 17]

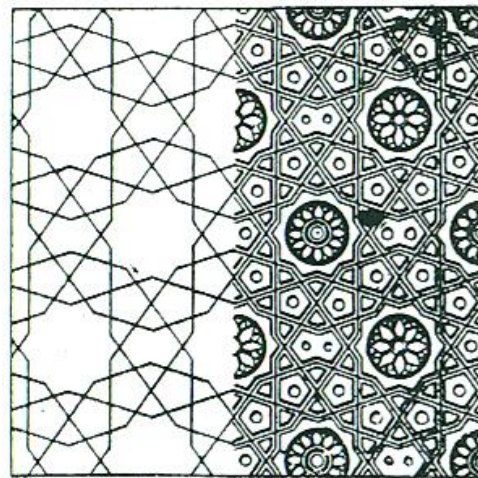


Fig 22: [Siddiqi 1970: 17]

Figure 19- 22 represent some examples of the geometric interacements used in Isa Tarkahn’s tomb. Fig 19 is derived from a six pointed star geometry, fig 20 uses 12 pointed star fig 21 uses 8 pointed star and fig 22 uses 10 pointed star. The pillars of the galleries use arabesque design for the ornamentation of the square shaft with 4 bracketed capital having *muqarna* detail (fig 23-24).

“In Hindu mythology, the lotus is indicative of presence of goddess Lakshmi and considered a symbol of sun, representing the womb of universe which gave birth to all creations”.

Source: Lari, Yasmeen, Suhail Zaheer Lari. 1997. *The Jewel of Sind Samma Monuments on Makli Hill*. Karachi. Oxford University Press.





Fig 23: Image of carved stone pillar, Tomb of Isa Khan Tarkhan –II

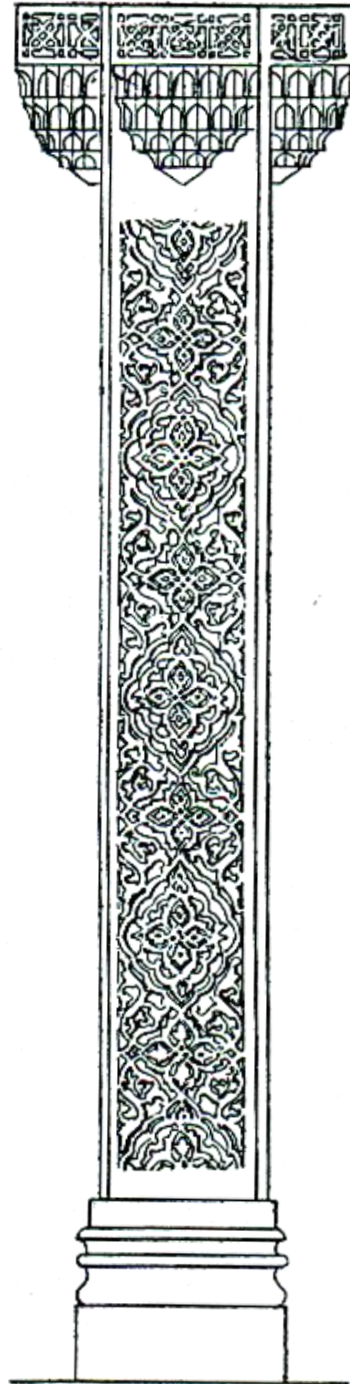


Fig 24: Detail of carved stone pillar, Tomb of Isa Khan Tarkhan –II [Siddiqi 1970: 12]

CONCLUSION:

The cases discussed in the paper reflect the use of archetypical domed square chamber possibly derived from *chahar-taq* plan. The geometry of the Square-Polygon-Circle used for the tombs has symbolic meaning and reflect the physical, psychic and spiritual world. Both monuments are domed square chambers (with some stylistic variation and a missing dome) therefore the symbolism attached with geometry of form applies.

The surface decoration is where the monuments vary in their selection of motifs. Jam Nizam's tomb borrows from the prevailing traditional Gujarat/Kutch motifs the reason can be availability of artisans and their expertise. We know that Samma rulers were native people and later converted to Islam and their predecessors belonged to Hindu Rajput clans. The use of motifs may also suggest their affection towards the prevailing tradition and craft. When it came to selection of form the tomb is inherently Islamic although the structural system is trabeated⁶ again reflecting the availability of masons who were trained to built in post and beam system since ages. Similar problem was faced by early Delhi Sultanate dynasty where the evolution from trabeated to arcuated construction took its due time but the forms reflected arcuated vocabulary.

For the next 120 years of tomb building on site we see prevailing fixation with the domed square chamber (possibly due to meaning of geometry of form). The decoration nevertheless shifted from very Hindu/Gujarat/Kutch based motifs to arabesque and Islamic geometric interlacement patterns as shown in Isa Khan Tarkhan's tomb.. These patterns are extant on the monuments constructed during reign of Islamic Empires around the globe. It can be argued that as Tarkhans were from Central Asia they brought with them the geometric interlacement and arabesque expertise/knowledge that fuses with the prevalent tradition on the site of Makli and is reflected in the ornamentation of the tombs. Hence Isa Tarkhan's tomb uses the archetypical form, Islamic patters for ornamentation but uses stone for construction and very Gujarat adopted-adapted double colonnaded galleries.

6. The author had her master's thesis done on monuments of Samma Period at Makli Necropolis where a portion of chapter discusses the use of trabeate construction technique is used to make arches and squinches through corbelling and use of brackets. For detail refer, Dani, Ahmad Hasan. 1982. *Thatta Islamic Architecture*. Islamabad. Institute of Islamic History Culture and Civilization. OR Lari, Yasmeen, Suhail Zaheer Lari. 1997. *The Jewel of Sind: Samma Monuments on Makli Hill*. Karachi. Oxford University Press.

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